

Application No.: 10/564,817
Amendment under 37 CFR 1.111
Reply to Office Action dated February 22, 2010
May 24, 2010

AMENDMENTS TO THE CLAIMS

Please substitute the following claims for the pending claims with the same numbers respectively:

Claim 1 (Previously presented): A data area managing method for an information recording medium, the method is used in an information processor that manages data stored in an information recording area in the information recording medium as file information, wherein

when said information processor accesses area management information that manages a free area state and link state of the information recording area in said information recording medium as the file information,

reading said file information of a first access size from said area management information when retrieving a free area from said area management information; and

reading said file information of a second access size smaller than the first access size from said area management information when retrieving link information from said area management information.

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Claim 2 (Cancelled):

Claim 3 (Previously presented): The data area managing method according to claim 1, wherein said second access size is identical to a minimum reading and writing size of said information recording medium.

Claims 4-5 (Cancelled):

Claim 6 (Currently amended): The data area managing method according to claim 1, wherein two caches each having a different management block size are provided as area management information caches in said information processor, and by alternatively using said two caches for different purposes, at least one of said first access size and said second access size is changed according to the processing executed by said information processor.

Claim 7 (Previously presented): The data area managing method according to claim 6, wherein the processing executed by said information processor comprises:

a free area retrieval processing for retrieving a free area from said area management information; and

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a link destination acquisition processing for
acquiring a linked destination from said area management
information.

Claim 8 (Currently amended): The data area managing method
according to claim 7, wherein as an alternative use of said two
area management information caches,

when said information processor executes said free area
retrieval processing, said information processor uses a first
area management information cache having a physical management
block size determined from physical characteristics of said
information recording medium or [[less]] a size smaller than said
first area management information cache, and

when said information processor executes said link
destination acquisition processing, said information processor
uses a second area management information cache smaller than said
first area management information cache as an access unit of said
information recording medium.

Claims 9-10 (Cancelled):

Claim 11 (Previously presented): The data area managing
method according to claim 8, wherein said second area management

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information cache is used only for an exclusive processing for reading, and

 said first area management information cache is used when information stored in said area management information is changed.

Claim 12 (Currently amended): An information processor which accesses an information recording medium that manages data stored in an information recording area by a file system comprising:

 a FAT cache for ~~reading and storing~~ configured to read and store area management information which manages a free state and link state of said information recording area from said information recording medium;

 a volatile memory for ~~holding~~ configured to hold data including: a start address of each block, location of the area management information stored in each block on said information recording medium, size of each block, and presence or absence of update, as FAT cache management information for managing said FAT cache by dividing said FAT cache into a plurality of blocks;

 a FAT cache controller for ~~referring to and updating~~ configured to refer to and update said FAT cache management

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information and controlling a read and change of said area management information to said FAT cache; and

a file system controller for accessing configured to access the area management information through said FAT cache controller and storing data in the information recording medium as a file, wherein

said FAT cache has at least one block having a first access size and at least one block having a second access size; and said second access size is smaller than said first access size;

wherein when said information processor accesses area
management information that manages the free area state and the
link state of the information recording area in said information
recording medium as the file information,

reading said file information of the first access size from
said area management information when retrieving a free area from
said area management information; and

reading said file information of the second access size
smaller than the first access size from said area management
information when retrieving link information from said area
management information.

Claim 13 (Previously presented): The information processor according to claim 12, wherein said second access size is

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identical to a minimum reading and writing size of said information recording medium.

Claim 14 (Cancelled):

Claim 15 (Previously presented): The information processor according to claim 13, wherein said file system controller accesses a block having the first access size included in said FAT cache through said FAT cache controller when a free area retrieval processing for retrieving a free area from said area management information is performed, and accesses a block having the second access size included in said FAT cache through said FAT cache controller when a link destination acquisition processing for acquiring a linked destination from said area management information is performed.

Claim 16 (New): The data area managing method according to claim 1, wherein said information recording medium is a NAND flash memory.

Claim 17 (New): The data area managing method according to claim 1, wherein said first access size is a size of an erase

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block which is determined from physical characteristics of said information recording medium.

Claim 18 (New): The data area managing method according to claim 17, wherein a size of said area management information is not a size of an integral multiple of the size of the erase block, and

 said first access size of said area management information is less than said erase block size.

Claim 19 (New): The data area managing method according to claim 1, wherein said information processor provides a first cache for retrieving a free area referring to said area management information and a second cache for retrieving a link state referring to said area management information,

 said information processor stores data of said first access size to said first cache read from said area management information, and

 said information processor stores data of said second access size to said second cache read from said area management information.

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Claim 20 (New): An information processor for accessing an information recording medium having an information recording area and area management information that manages a free area state and a link state of the information recording area in said information recording medium, comprising:

an access unit that accesses said area management information in said information recording medium; and
a storing unit that stores data acquired through accessing,
wherein

said access unit reads data of a first access size from said area management information and stores data to said storing unit, when retrieving a free area from said area management information, and

said access unit reads data of a second access size smaller than said first access size from said area management information and stores data to said storing unit when retrieving link information from said area management information.

Claim 21 (New): The information processor according to claim 20, wherein

said second access size is identical to a minimum reading and writing size of said information recording medium.

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Claim 22 (New): The information processor according to
claim 20, wherein

 said information recording medium is a NAND flash memory.

Claim 23 (New): The information processor according to
claim 20, wherein

 said first access size is a size of an erase block which is
determined from physical characteristics of said information
recording medium.

Claim 24 (New): The information processor according to
claim 23, wherein

 a size of said area management information is not a size of
an integral multiple of the size of the erase block, and

 said first access size of said area management information
is less than said erase block size.

Claim 25 (New): The information processor according to
claim 20, wherein said information processor provides a first
cache for retrieving a free area referring to said area
management information and a second cache for retrieving a link
state referring to said area management information,

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 said information processor stores data of said first access
 size to said first cache read from said area management
 information, and

 said information processor stores data of said second access
 size to said second cache read from said area management
 information.